

examined the colliculus seminalis is complete posteriorly and attached to the wall of the urogenital canal for the whole of its length; on either side of this is the crescentic aperture of the vesicula seminalis, which lies to the outside of the small aperture of the vas deferens or unites with it (*Propithecus*). *Hapalemur griseus* appears to occupy an intermediate position between *Lemur* on the one hand and *Propithecus* on the other, since the aperture of the vas deferens, though distinct from that of the vesicula seminalis, is enclosed within the same area.

The structure of the vesiculæ seminales in *Hapalemur* is exactly like that of *Lemur catta*; while in *Perodicticus*, *Loris gracilis*, and *Nycticebus tardigradus* the vesiculæ seminales are stout, pyriform sacs with thick walls raised internally into longitudinal ridges, of which two are especially stout and thick; these are united by a network of smaller ridges; the distal end is not bent inwards and partially constricted off as in *Hapalemur* and *Lemur*. In all these points *Arctocebus* appears to resemble *Nycticebus* &c.

The penis of *Hapalemur griseus*, as in other *Lemurs*, is furnished with a bone; the glans penis is rough and tubercular, being covered with numerous small plates, some of which bear short, recurved spines, which are longer upon the hinder part of the glans; the anterior end of the glans penis is smooth and grooved upon its lower surface to correspond with the bifid extremity of the os penis; the urethra opens at the posterior extremity of this groove.

Postscript added June 21st.—I am now able to state that the patch of spine-like processes upon the arm is not a sexual character, but is found in both sexes of *Hapalemur griseus*, while it is unrepresented in *Hapalemur simus*; I applied for information on this point to Dr. Jentink and to Prof. A. Milne-Edwards; these gentlemen very kindly examined the large series of examples of the two species preserved in the Museums of Leyden and Paris, and informed me that *Hapalemur griseus* is distinguished from *H. simus* by a patch of spines upon the arms, which, however, show certain differences in the two sexes: in the male they are as described above (p. 393); in the female the spines are replaced by hairs, but the patch as a whole is quite distinct from the rest of the integument of the arm. Dr. Jentink furthermore directed my attention to a possibly similar structure (a climbing organ?) upon the arm of *Lemur catta*, which has the form of a horny outgrowth somewhat like the spur of a cock.

2. On some Hybrid Bovine Animals bred in the Society's Gardens. By A. D. BARTLETT, Superintendent.

[Received June 3, 1884.]

(Plates XXXIV. & XXXV.)

The subject to which I have the pleasure of calling your attention this evening is the production of some remarkable Bovine animals in the Society's Gardens.

have been produced by a mixture of species. And in support of this opinion I will call your attention to some of the species of the Equine and Asinine group of animals. And I shall endeavour to show some very remarkable points to be found in confirmation of my ideas upon this subject.

During my visit to Norway I was much interested in noticing the multitudes of ponies in that country. By far the greater portion of them were dun-coloured, varying from dark dun to a pale cream-colour; but the most striking peculiarity was the striped or zebra-marked legs, together with *one* or *two*, and sometimes *three*, *shoulder-stripes*; most of them had also the dark medial line running from the mane down the back, ending in the tail.

These characters appear frequently among individuals of the common Domestic Ass, and also among Mules, the produce of the Horse and Ass.

The former Earl of Derby published in the 'Knowsley Menagerie' plates of several hybrid animals belonging to this family, the most remarkable one being of a double Mule that was born in the Gardens of this Society. This Mule had in its composition the *Zebra*, common *Ass*, and *Horse*. You will observe in the illustration now before you—and I can say from my own knowledge it is a most accurate representation of this animal—that the long hair commences from the base of the tail, like that of the Horse, whereas all the Zebras and Asses have the long hair at the extremity of their tails only.

My object in bringing forward this part of the subject is in the hope that it may induce experiments to be made that will lead to some important and useful discoveries. Having such positive proof of the fertility of some hybrids, I feel anxious that the old superstition should be entirely removed. The belief, so general, that all hybrids or mules are barren and useless for breeding-purposes is simply a stupid and ignorant prejudice, and has been the means, in my opinion, of preventing many valuable discoveries.

The late Mr. Darwin in his 'Origin of Species' calls particular attention to the Zebra-like markings observable in a number of animals of the Equine and Asinine family, and it appears to me to be highly probable that the Horse was originally produced by the mixture of species, seeing the unlimited variation in *size*, *colour*, *form*, and *marking*, and bearing in mind that no wild animal has been discovered that fairly represents the Horse.

The zebra-markings, so common among the very ancient stock of ponies in Norway, seem to indicate their remote origin to be connected with a striped animal, the traces of which are still visible.

I had intended to extend these remarks, and to have added a list of the hybrids that are known to be fertile, but finding that there are some valuable experiments now being carried out by Mr. Day and others, in the hope of producing a non-migratory Salmon, by the mixture of other species of the Salmonidæ, I have deferred doing so in order to make the list more complete.

EXPLANATION OF THE PLATES.

PLATE XXXIV.

- Fig. 1. Female hybrid bovine, B. Born May 21, 1881.
 2. Female hybrid bovine, C. Born March 12, 1884; one month old.
 (Drawn April 14, 1884.)

PLATE XXXV.

- Fig. 1. Female hybrid bovine, C. Born March 12, 1884; eleven weeks old
 (Drawn June 1, 1884.)

3. On the Unimportance of the Presence or Absence of the Hallux as a Generic Character in Mammalogy, as shown by the gradual Disappearance of this Digit within the limits of a single Genus. By G. E. DOBSON, M.A., F.R.S.

[Received May 29, 1884.]

The presence or absence of the hallux has been so often considered by mammalogists as sufficient ground for the formation of a new genus, that any instances in which it can be shown that this digit may disappear within the limits of a single genus, the species of which are united by indissoluble bonds of common affinity, is of much interest and importance.

Of all the genera of Placental Mammals few exhibit such close affinities among the species composing them as *Erinaceus*, which may be taken as an example of a thoroughly natural genus incapable of division into subgenera or well-marked subdivisions of any kind. Nevertheless this genus has been divided, one species, *E. albiventris*, having formed the type not only of a new subgenus (*Atelerix*, Pomel), but even of a new genus (*Peroëchinus*, Fitzinger).

Although, as already pointed out in my 'Monograph of the Insectivora'¹, I have long considered the absence of the hallux in *E. albiventris* of little importance, seeing that that digit presents all degrees of development in the other species, from its comparatively large size in *E. europæus* down to its rudimentary condition in *E. diadematus*, where it is only 4 mm. in length, yet, up to the time of writing this note, I was unable to find any examples in which the extent of development of this digit might be said to be truly intermediate between its condition in *E. diadematus* and *E. albiventris*. Lately, however, in a collection kindly made for me at Lagos by the Colonial Surgeon, Dr. J. W. Rowland, I found specimens of *E. albiventris* (well preserved in alcohol), which furnish all the material required.

The specimens referred to consist of examples of an adult female, in which the second upper premolars of both sides have already been

¹ 'A Monograph of the Insectivora, Systematic and Anatomical,' pt. i. p. 11 (1882).